

NEW LARVAL FOODPLANT RECORDS AND NOTES ON THE
BIOLOGY OF *TRAPEZITES SYMMOMUS* HÜBNER, *T. PRAXEDES*
(PLÖTZ), *T. MAHETA* (HEWITSON) AND *HESPERILLA SARNIA*
ATKINS (LEPIDOPTERA: HESPERIIDAE: TRAPEZITINAE) FROM
SOUTHEAST QUEENSLAND

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Abstract

Species of *Lomandra* and *Romnaldia* (Lomandraceae) are recorded as larval foodplants for the skipper butterflies *Trapezites symmomus* Hübner, *T. praxedes* (Plötz) and *T. maheta* (Hewitson). The larval foodplant of *Hesperilla sarnia* Atkins is confirmed as *Scleria sphacelata* (Cyperaceae) in southeastern Queensland and juvenile and adult biological information is provided.

Introduction

The Australian endemic skipper butterflies *Trapezites symmomus* Hübner, *T. praxedes* (Plötz) and *T. maheta* (Hewitson) are relatively common, sympatric but local species in the hinterland of the Sunshine Coast, north of Brisbane in southeastern Queensland. They occur in a fairly broad range of woodlands and forest where their recorded foodplants, *Lomandra* spp. (Lomandraceae) occur in the understorey.

Hesperilla sarnia Atkins is a very cryptic species of sedge skipper, distributed in disjunct localities in southeastern, central eastern and northern Queensland. It is rarely observed in the Sunshine Coast area; most records refer to 'hill-topping' males but otherwise its habits are virtually unknown. Specimens have been reared from *Scleria laevis* (Cyperaceae) in the Townsville area (Braby 2000) and *S. sphacelata* F. Muell. at Blackdown Tableland (personal observations), but the larval foodplant was previously unrecorded in southern Queensland.

Methods and identification

In 2002, 2003 and 2004, I surveyed areas of wallum heath, mixed woodlands and rainforest at various localities from Beerwah to Noosa. Juvenile stages of trapezistine skippers were collected in the field and reared to adults on *Lomandra* and *Scleria*. Several eggs of *Trapezites praxedes* and *T. maheta* were also obtained from captive females in netted pot plants of various *Lomandra* species. Ovipositing females were also observed in the field, but some species frequently lay eggs on substrate debris, making clear identification of larval foodplants difficult.

The surface colour pattern of the eggs of *Trapezites* Hübner species is variable but generally diagnostic, even in closely related species. Larval head patterns can also be distinguished, particularly from the third instar onwards (Atkins 1999).

Larvae of *Hesperilla sarnia* differ from other species of *Hesperilla* Hewitson in the darker body and head markings. It is the only species that feeds on *Scleria* in sub-rainforest areas of the Sunshine Coast.

Observations

Trapezites symmomus

Larvae of trapezitine skippers were observed on several species of *Lomandra* in mixed woodland. *Trapezites symmomus* larvae were found on *L. hystericx* and *L. longifolia* in many areas and were also observed on cultivated plants of the same species near suburban shopping centres. In July 2003, in old growth rainforest near Mapleton, a mature larva of *T. symmomus* was found in a silken shelter woven at the base of eaten leaves in a tussock of *Romnalda strobilacea* R. Henderson & Sharpe (Lomandraceae). This is a newly recorded genus (and species) of larval foodplant for the Trapezitinae.

Romnalda is a rare genus, with *R. strobilacea* known only from a few localities in southeastern Queensland (Blackall Ranges, Eumundi, Kin Kin) (Bedford *et al.* 1986). A second species, *R. grallata*, is recorded from northern Queensland while a third species, *R. papua*, occurs in Papua New Guinea. A search of material held at the Sydney Herbarium revealed typical trapezitine angled larval feeding cuts on the leaves of dried specimens of *Romnalda* from both Australia and Papua New Guinea.

Trapezites praxedes

Second to third larval instars of trapezitine larvae (probably *T. praxedes*) were also found at the base of *Lomandra spicata* and *L. laxa*, at Nambour and Noosa respectively, in early August 2003. *Lomandra laxa* is a new foodplant record for *Trapezites*, not listed by Braby (2000). Observations on adult seasonality and larval size suggest that *T. praxedes* has three broods each year, from September to October, December to January and March to April.

Trapezites maheta

In October 2000, two second instar larvae and a mature final instar larva of *T. maheta* were found on *Lomandra multiflora* at Rustic Cabin, north of Landsborough. At Pomona in March 2004, a female *T. maheta* oviposited on *L. filiformis* and a third instar larva was collected on *L. confertifolia*. These are new foodplant records for this skipper. At Eudlo, *T. maheta* has two broods each year, from October to November and February to March, but in favourable seasons they might have a third brood, since three of the Pomona larvae (reared indoors) pupated in late autumn and a male emerged in May.

Hesperilla sarnia

The genus *Hesperilla* contains a number of locally distributed species. *H. sarnia* is known only from isolated populations in southeastern, central eastern and northern Queensland (Braby 2000). Distinctive larval tube shelters and serrated 'V' cuts on leaf edges of *Scleria sphacelata*,

characteristic of this skipper, were observed at Landsborough, Eudlo, Buderim, Chevallum, Forest Glen, Kunda Park, Palmwoods, Parklands, Montville, Mapleton and north of Yandina during the survey. Only 14 sites (larvae and/or freshly constructed shelters) were found at these localities and were sparsely distributed within certain mixed forest communities, some remnant and a few bordering urban and suburban areas. The Palmwoods site confirms a very early locality record for *H. sarnia* (known then as *H. sexguttata* Herrich-Schäffer) by L. Franzen in 1902 (see Atkins 1978).

The habitats of these southern populations of *H. sarnia* were mostly wet sclerophyll / rainforest associations, differing somewhat from the open, dry woodlands and ravine palm forest of the Blackdown Tableland, central Queensland (personal observation). Although the foodplant generally occurs in isolated but large colonies (mostly on eroded sandstone soils), the breeding sites tended to be very local and broadly scattered through the woodland. Most were localised within dark, damp areas, especially near the banks of permanent streams adjacent to old growth rainforest, or within sub-rainforest woodlands situated on undulating slopes, generally with a bracken fern ground cover and mossy logs. None were found in elevated rocky areas, such as those found in northern Queensland (Johnson and Valentine 1983). Typical breeding sites consisted of a colony of numerous (100+), medium to small *Scleria* sedges, randomly clustered together in smaller subgroups. A few of these clusters contained from one to five larval shelters of various sizes. Only one, rarely two larvae occupied individual plants.

Home-reared larvae vacated their first made shelter within a few weeks to occupy new (2-4 consecutive) shelters on adjoining plants, even when plenty of foliage was still available on the original tussocks. In other species of *Hesperilla*, as the larva grows, a maximum of two to three shelters (including the first instar) are made, usually on the same tussock, with pupation occurring in the final shelter (personal observations). It may be that the larvae of *H. sarnia* remake shelters to confuse or avoid attack by parasites, or perhaps it is an acquired evasive measure to avoid the retaliatory toxins produced by the invaded plants. Captive larvae of *H. sarnia* fed during daylight hours, generally from 0800-0930 and again from 1600-1700 EST. They ceased feeding in late November and remained in diapause for several weeks.

Aestivation of *H. sarnia* larvae was suggested by Braby (2000) and has also been recorded for *H. donmya* Hewitson (personal observation). During early summer, a few sites contained both late and second instar larvae, suggesting a two brood annual cycle, but generally the larvae were very similar in size, indicating that there would normally be a coordinated emergence of adults in late spring and/or late summer, probably dependant on rainfall regimes. Larvae of *H. sarnia* from the Sunshine Coast are similar to those from central

Queensland and match the description of those from northern Queensland given by Johnson and Valentine (1983).

In March 2003 (at 1200 h), at Kunda Park, a female *H. sarnia* was observed flying low around many clumps of *Scleria sphacelata*, settling briefly only on a few plants before rapidly moving on. No oviposition was recorded during the five minutes of observation. This supports the view that females on the Sunshine Coast are very specific in their choice of breeding sites and probably oviposit sporadically on widely dispersed and individually selected plants.

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References

- ATKINS, A.F. 1978. The *Hesperilla malindeva* group from northern Australia, including a new species (Lepidoptera: Hesperidae). *Journal of the Australian Entomological Society* 17: 205-217.
- ATKINS, A.F. 1999. The skippers, *Trapezites* (Hesperidae). Chapter 5, pp 75-104, in: Kitching, R.L., Scheermeyer, E., Jones, R.E. and Pierce, N.E. (eds), *Biology of Australian butterflies. Monographs on Australian Lepidoptera*, Vol. 6. CSIRO Publishing, Collingwood; xvi + 395 pp.
- BEDFORD, D.J., LEE, A.T., MacFARLANE, T.D., HENDERSON, R.J.F. and GEORGE, A.S. 1986. Xanthorrhoeaceae. Pp 88-171, in: George, A.S. (ed.), *Flora of Australia*. Vol. 46, Iridaceae to Dioscoraceae. Australian Government Publishing, Canberra; 247 pp.
- BRABY, M.F. 2000. *Butterflies of Australia their identification, biology and distribution*. CSIRO Publishing, Collingwood; xxvii + 976 pp.
- JOHNSON, S.J. and VALENTINE, P.S. 1983. Notes on the biology and morphology of *Hesperilla sarnia* Atkins (Lepidoptera: Hesperidae). *Australian Entomological Magazine* 10(1): 6-8.